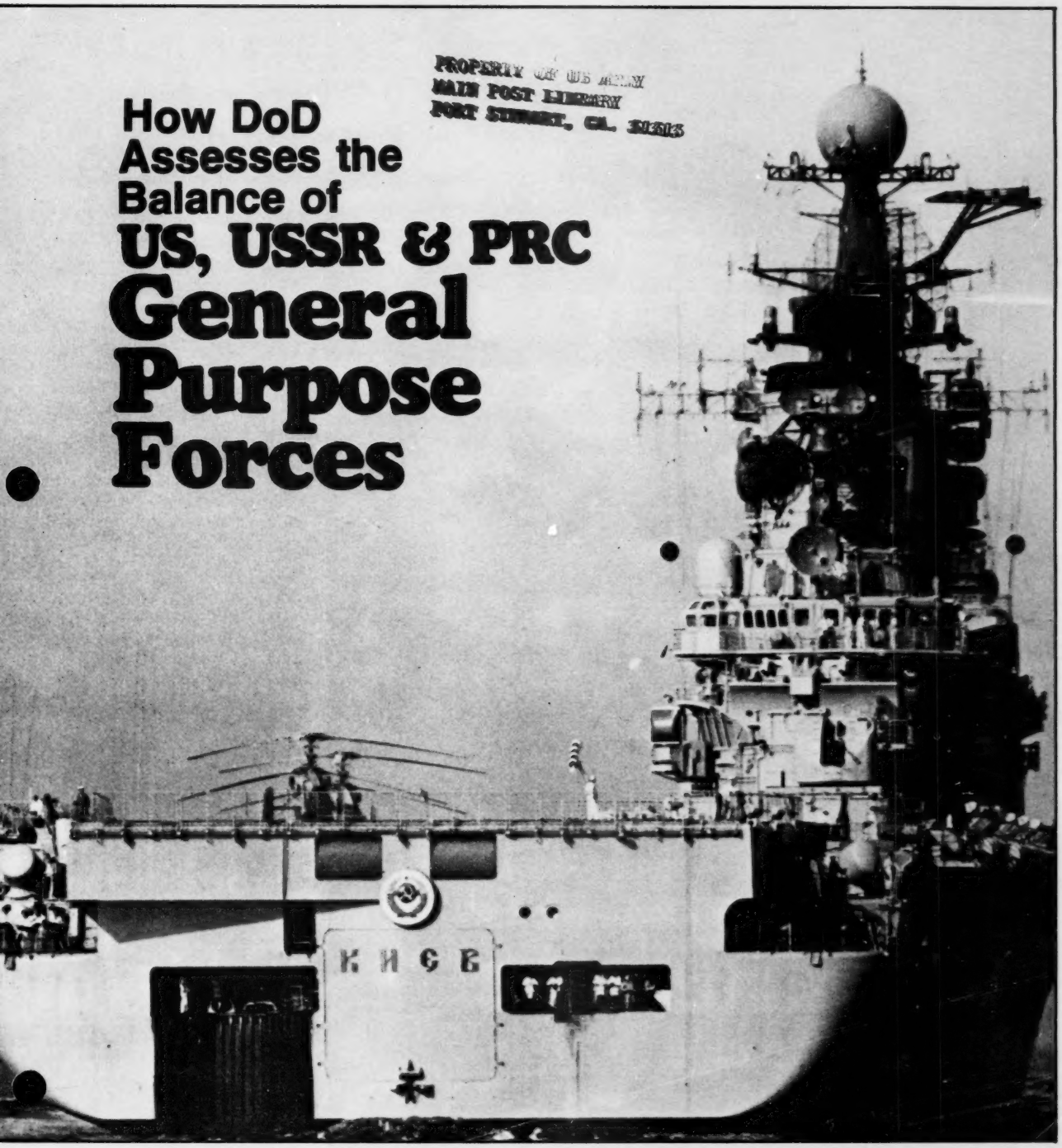
VOL. 20, NO. 4/FEBRUARY 17, 1977

COMMANDERS DIGEST

PROPERTY OF US ARMY
MAIN POST LIBRARY
FORT STEWART, GA. 31313

How DoD Assesses the Balance of US, USSR & PRC General Purpose Forces



The U.S.S. Los Angeles (SSN 688), one of 31 attack submarines of the 688 class which were approved for acquisition by Congress, was commissioned in November 1976. Construction of this type submarine will continue until at least the mid-1980s.

The Soviet Union is steadily developing and deploying new general purpose forces and weapon systems. In the past few years, these force improvements have gained momentum.

The Soviets maintain a quantitative advantage over the North Atlantic Treaty Organization (NATO) in combat divisions, tanks, armored fighting vehicles, artillery and combat aircraft, and they are modernizing these forces to close the qualitative gap which, in the past, has favored NATO. The Soviet rationale for this numerically superior edge appears to be related to their desire to have a preponderance of force to reduce risk in any undertaking.

The assessment of land, sea, and air force postures which follows is divided according to functional area for e[illegible]n understanding. However, our land, sea, and air assets would normally be employed as a joint force.

One of the most compelling military lessons of World War II was the need for combat forces of the military Services to function in an integrated manner. Our present joint planning

U.S.,

Genera

This Kresta II class guided missile cruiser is one of eight deployed by the Soviet Union. It is steam powered, therefore more economical to operate than the Soviets' Kara, another light cruiser.

ystem and
ified command
arrangement have evolved from this fundamental lesson. Our land, sea, and air forces are generated and supported by the individual Services. Our major combatant forces, however, are organized with units of various Services, employed jointly, and are commanded by a single commander.

Assessing the Balance of , U.S.S.R. & P.R.C. al Purpose Forces

DEFENSE NEWS BRIEFS

MAC Becomes Specified Command

The Military Airlift Command (MAC) was designated a Specified Command on Feb. 1, 1977, reporting to the President through the Secretary of Defense.

Headquartered at Scott AFB, Illinois, MAC will provide military airlift during wartime, periods of crisis, Joint Chiefs of Staff (JCS) exercises, and as necessary to insure support to the other unified and specified commands.

★ ★ ★ ★

ROTC Enrollments Up

ROTC enrollments increased eight per cent in FY 1977 to 81,544 versus the FY 1976 total of 75,631. The rise was attributed primarily to the 13 per cent jump over the last fiscal year in Army ROTC, which includes 11,888 female cadets in its 56,443 enrollment.

At the beginning of FY 1977 there were some 493 ROTC units on 356 college and university campuses.

Officer production requirements for all the military Services are being met through a combination of officer pre-commissioning sources, including ROTC. Where shortages are expected to occur, short lead-time programs (such as Officer Candidate School in the Army and Navy, and Officer Training School in the Air Force) are used to make adjustments.

★ ★ ★ ★

USAF Associate Degrees

General Jones

Enlisted Air Force personnel can now earn associate degrees through the Community College of the Air Force (CCAF).

"This landmark decision was reached after extensive review by the Department of Defense, the Congress and the U.S. Office of Education," said Gen. David C. Jones, Air Force Chief of Staff, who also pointed out, "It marks the first time in history that a military agency has been given the authority to grant degrees to members of the enlisted force."

Air Force enlisted personnel will be able to earn the two year college degree by combining military instruction which the CCAF certifies as equivalent to college-level courses, with specified courses from civilian institutions.

★ ★ ★ ★

Bonus

Extension of the enlistment and reenlistment bonus authority through the end of Fiscal Year 1978 contained in a bill (H.R. 583) before Congress was strongly supported by Deputy Assistant Secretary of Defense (Military Personnel Policy) VADM John G. Finneran on Feb. 2, 1977, in his testimony before the House Armed Services Committee.

As a reflection of national policy, it is important that we be able to operate side by side with our allies. Security assistance efforts, forward deployment of our forces, progress in standardization, rationalization and interoperability, and programs of overseas visits and exercises have enhanced our capability for combined operations.

Making an important contribution to this capability for combined operations is the current effort in NATO toward development of combined doctrine. The lessons our forces are learning in the REFORGER strategic mobility exercises and day-to-day field operations with our NATO allies are providing the basis for combined operations doctrine. Our efforts go beyond bilateral arrangements and beyond generalities to permit U.S. artillery to fire in support of allied infantry, allied ships to operate with U.S. naval vessels, and all to share allied air support. In the past year there has been definite progress toward a common understanding of military doctrine and toward improved capabilities for mutual support in combat as exemplified by the recently distributed NATO air and land tactical doctrine documents.

Ground Forces

During the past 10 years, the Soviet Union has engaged in a sustained effort to enhance the combat capabilities of its ground forces. Improvements have been both quantitative and qualitative and, in some cases, dramatic. The ground establishment has been transformed from a nuclear-oriented force, austere in its conventional artillery and logistic assets, to one capable of operating in a nuclear or nonnuclear environment. The Soviets accomplished this by increasing unit strengths and by providing sophisticated weapons and equipment.

Soviet ground forces have increased by some 800,000 men since 1965. Concurrently, our assessment of the total number of active Soviet divisions rose from 148 in 1965 to the current total of more than 170. While a portion of the higher total represents a reassessment, an actual augmentation did occur during the period, largely a result of the buildup on the Sino-Soviet border and the creation of new divisions in the Soviet Union to replace those that moved to the Sino-Soviet border. The number of Soviet divisions outside the Union of Soviet Socialist Republics (U.S.S.R.) and opposite the NATO Central Region increased from 22 to 27 after the 1968 invasion of Czechoslovakia. These, coupled with 31 East European divisions, constitute an immediate threat of 58 divisions opposite the NATO Central Region.

Between 1965 and 1975, the authorized personnel strength of each motorized rifle division increased from an assessed 10,500 to more than 11,500. Concurrently, personnel authorization for each tank division rose from some 8,500 to approximately 9,000.

The number of main battle tanks in a motorized rifle division in 1965 totalled 190. Expansion of tank battalions

and incorporation of an independent tank battalion raised that total considerably by 1975. Furthermore, by 1976 more than half the older T-54 and T-55 medium tanks opposite the NATO Central Region had been replaced by the more modern T-62. In late 1976, the modern T-72 began to appear in sizeable numbers in Soviet divisions in East Germany.

The number of conventional artillery howitzers and multiple rocket launchers organic to the motorized rifle division increased substantially between 1965 and 1975. The number of tank division artillery weapons also increased dramatically.

In 1965, some 30-35 towed and self-propelled antiaircraft artillery pieces constituted the total air defense assets of both type divisions. Both now hold almost twice that number of air defense weapons, including self-propelled antiaircraft artillery and vehicle-mounted surface-to-air missiles. Additionally, a large number of portable surface-to-air missiles are organic to both divisions.

By 1975, a relatively large number of new weapon systems were appearing with ground units. These included: a new medium tank, the T-72; an innovative infantry combat vehicle, the BMP; new 122 mm and 152 mm self-propelled howitzers, and several divisional surface-to-air missiles, which are both vehicle-mounted and portable.

The improvement in Soviet general purpose ground forces has greatly enhanced the Soviet capability for fighting a nonnuclear war. At the same time, the U.S.S.R. tactical nuclear capabilities continue to grow. The Scud and Scaleboard short-range missiles continue to be added to the forces.

Non-Soviet East European forces are essential elements of the Warsaw Pact capability for unreinforced attack of the NATO Central Region. Between 1965 and 1975, East European forces opposite the NATO Central Region remained constant numerically but were qualitatively enhanced. In 1965, these forces were in the early stages of operational integration with the Soviet contingent and probably not sufficiently adequate to obviate reinforcement from the U.S.S.R. prior to hostilities. By 1975, however, the Warsaw Pact had exercised several scenarios for unreinforced attack, suggesting increased Soviet confidence in East European operational capabilities.

The ground forces of the U.S.S.R. are organized into more than 170 divisions and supporting forces. In addition, there are 55 non-Soviet Warsaw Pact divisions. Of this total of some 225 divisions, about 86 U.S.S.R. and Warsaw Pact divisions are in Eastern Europe opposite NATO.

U.S. Efforts vs. Warsaw Pact

In order to support NATO and to meet the increased Warsaw Pact threat, the United States has been raising its Army active force from 13 to 16 divisions, while retaining an end strength of 790,000 men and women. One of the additional three divisions is scheduled to achieve deployment readiness by the end of FY 1977 and the other two by the end of FY 1978. This will appreciably increase U.S. strategic posture by raising U.S.S.R. perception of U.S. capability, which in turn lessens the likelihood of Soviet adventurism. Drastic cuts in headquarters support and administrative elements were made in order to make these 16 active divisions possible. The new divisions, each consisting of two brigades plus a division base, are stationed at Fort Ord, California, Fort Hunter Stewart, Georgia, and Fort Polk, Louisiana. The third brigade for each of these divisions has been provided by the Reserve components as a part of the Affiliation Program. This program provides for the assignment of Reserve brigades and separate maneuver battalions to round out and to augment stateside active divisions. Augmentation will provide additional combat units above normal structure of divisions. The battalions needed to round out the active divisions will receive the same priority for equipment and other support as the active divisions themselves. Affiliated units will also have very high priority for resources, inasmuch as in time of war, the Reserve component unit would be deployed and fight as an organic part of the active division.

Deployment of two brigades to Europe, one each from the Second Armored and Fourth Mechanized Divisions, has been completed as planned. The first of the brigades deployed to Europe in March 1975, and will further deploy to the NATO Northern Army Group area in late 1978. The second deployed in March 1976. Initially, combat battalions of the brigades stationed in Europe were scheduled to rotate stateside semiannually. However, due to fiscal constraints and training problems, these brigades are programmed for conversion to permanent status.

The conversion of two Army infantry divisions to mechanized infantry will further enhance our visible deterrent power and will underscore U.S. resolve to meet its NATO comments.

PRC Ground Forces

The People's Republic of China Army (PRCA) possesses only a limited capability to project military forces beyond China's border and therefore poses no direct threat to the United States. The Chinese are, however, capable of affecting U.S. interests in Asia.

The PRCA, with a strength of approximately 3.5 million, is composed of regional divisions and main force divisions, most of which are infantry divisions. The PRCA maintains a defensive orientation with more than half of the forces deployed in the primary threat area bordering the Soviet Union.

The two general classifications of regular PRCA combat units are main forces and local forces. Main force units are the tactical maneuver elements which are generally more heavily equipped than the local forces and are intended to be available for operations throughout the country.

Local forces are organized for the tactical defense of a specific area and are not generally rotated from this location. Local forces are normally under the command of the military region headquarters and consist of Border Defense (BD), Internal Defense (ID) and garrison units. The artillery heavy garrison units most frequently perform a coastal defense role. These regular units can be assisted and in some areas augmented by paramilitary elements—the Production and Construction Corps and the militia.

In response to increased tensions following the 1969 border clash with the Soviet Union, the PRC initiated a major shift in force deployment. The composition and disposition of Chinese forces in the north underlines the PRC's apprehension regarding Russian intentions in the area. The PRC maintains the bulk of its armored force in northern China.

Although the PRC has experimented with mechanized units, there are no indications that substantial mechanization or motorization of infantry units will occur in the near term. The primary emphasis appears directed toward upgrading the infantry division armor regiments and independent tank regiments. Additional improvements include expanding river crossing capabilities, increasing the firepower of artillery units, and upgrading local force capabilities.

The majority of China's regular ground force units are deployed in the vicinity of their expected wartime positions and are close to full strength in personnel and equipment.

Major Weapon Systems

Organizational structure and force deployments are two elements for analyzing a force balance. To bring the balance into perspective, the weapons available to the forces must be examined.

The Soviet inventory of major ground weapon systems is extensive and is found in active units, in mobilization units and in storage. More importantly, Soviet weapons are becoming increasingly sophisticated, causing NATO concern with its diminishing technological superiority over the Soviet Union.

MAJOR WEAPONS AND EQUIPMENT—GROUND FORCES
(JAN 1977)

	US	USSR	PRC
TANKS	10,000	45,000	8–9,000
APC & FIGHTING VEH.	22,000	45–55,000	3–4,000
ARTILLERY	5,000	19,000	15–17,000
HEAVY MORTARS	3,000	7,000	5–6,000
HELICOPTERS	9,000	3,800*	3–400

* 2300 IN FRONTAL AVIATION

CHART 1

The United States has not attempted to match the U.S.S.R. in numbers of ground force personnel or weapons. In large part we have relied instead on technology. However, evaluation of captured Soviet tanks, armored vehicles and missiles has provided strong indications that the technological gap between the United States and the U.S.S.R. is being narrowed. U.S. technology is still superior; however, the Soviet addition of sophistication to its already massive quantitative superiority makes it imperative that we continue to modernize our ground force equipment. Pursuit of potentially rewarding technology developments is essential.

The Soviet tank force consists of about 45,000 medium and heavy tanks, most of which are in units and mobilization divisions. By the end of 1976, more than 2,000 T-72s had been produced with a large number sent to the Group of Soviet Forces, Germany. Other major items of equipment in the inventory comprise between 45,000 to 55,000 armored personnel carriers (APCs) and fighting vehicles, almost 19,000 artillery pieces, and about 7,000 heavy mortars.

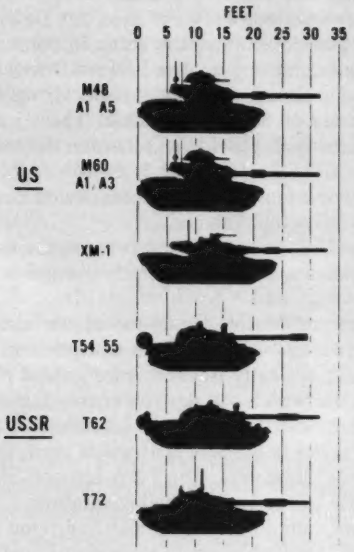
Although approximately equal to the PRC inventory, the U.S. tank inventory is less than one-quarter of our estimate of the total Soviet inventory. The U.S. inventory is now about 10,000. The U.S. Army's authorized acquisition objective is nearly 15,000.

Our main battle tank, the M-60A1, is comparable to the Soviet T-62 which is neither their newest nor their best tank. The T-72, their best tank, is estimated to have improved rangefinding capability, possibly incorporating a laser-rangefinder and an improved suspension system. The M-60 series now constitutes two-thirds of the U.S. inventory. Delivery of the M-60 to the Marine Corps was initiated in September 1974, and over the next two years, the 105 mm gun M-60 tanks should replace most of the old 90 mm gun M-48 tanks in both active and Reserve Marine Corps units. The M-60 series will be in the U.S. inventory until at least 1990.

The Army has undertaken a program of product improvement of the M-60A1 tank designed to increase reliability, durability, firepower, mobility and night fighting capability. The product-improved M-60A3 tank completed an operational test in February 1975, and incorporates a new track, a laser-rangefinder and full-solution electronic computer, passive night vision devices, a more reliable engine, and a stabilized gun system.

Additionally, in order to alleviate the critical near-term shortage of 105 mm gun tanks, the Army is converting its 90 mm gun M48 series tanks to a 105 mm gun configuration. This tank, the M48A5, is considered generally equal to the basic M-60 tank and will be issued to the Army's lower

COMPARISON OF US AND USSR TANKS



	WEIGHT (SHORT TONS)	SPEED (KM/HR)	MAIN ARMAMENT	MUZZLE VELOCITY (MPS)	MAXIMUM EFFECTIVE GUN RANGE	IOC EARLIEST/LATEST SERIES
US M48 A1 A5	52	50	105MM	1,584	1,250 METERS	1952/1976
US M60 A1, A3	57.3	50	105MM	1,584	1,850 METERS	1960/1979
US XM-1	58	50–60	105/120MM ?	1,584/?	2,000–3,000 METERS	
USSR T54 55	39.68	50	100MM TANK GUN D-10T2S	1,372	1,200 METERS	1949/1958
USSR T62	41.39	50	115MM SMOOTH BORE MODEL U-5TS	1,615	1,500 METERS	1961
USSR T72	38		115MM			1974

*ESTIMATED

CHART 2

ty Reserve component armor units.

For the 1980s, the Army is developing a completely new ain battle tank, the XM-1, designed to provide a gnificant improvement in offensive ground combat pability by improving armor ballistic protection, oss-country agility and firepower.

The newer Soviet fighting vehicles are the r-transportable amphibious armored combat vehicles, the MD, and the amphibious armored infantry combat ehicle, the BMP. These vehicles continue to enter the oviet inventory and will make significant contributions to oviet ground force mobility. Both are capable of firing ntitank guided missiles, a tank fighting capability not built to our current series of U.S. armored personnel carriers. owever, we do have a program to equip some of our xisting carriers with the tube launched, optically tracked ire guided (TOW) antitank missile.

The BMP is equipped with a 77 mm gun, an antitank uided missile system, and a coaxial 7.62 mm machine gun. he United States has nothing comparable deployed with its orces.

The Soviet BMD is similar to the BMP with a 73 mm gun, n antitank guided missile system and a coaxial machine un. Both the BMP and BMD are well suited for the Soviet litzkrieg concept since they can keep up with tanks and ght without dismounting the infantry riding in them.

Although continuing its gradual expansion, the PRC inventory of indigenously designed and produced armored personnel carriers (APCs) and fighting vehicles remains small when compared to that of the United States and the Soviet Union. China has not noticeably moved toward mechanization of the infantry. Although the PRC has experimented with force mechanization, APCs are primarily employed in a reconnaissance and command role. The availability of an increasing number of APCs may lead to mechanization of selected units but substantial force mechanization is not expected in the near term. Its gradual expansion reinforces other signals indicating development of a more modern mechanized force in the future.

The U.S. Army has designed the Mechanized Infantry Combat Vehicle (MICV) to increase the combat effectiveness and battlefield survivability of mechanized infantry and armored cavalry elements. The MICV will provide a totally new fighting capability—not merely replace the current M-113A1 personnel carrier—through mobility, armor protection, and firepower. The MICV will also be equipped with an integrated TOW antitank missile and a Bushmaster (25 mm cannon) armored turret when fielded.

The Soviet Union and the PRC, with their much larger ground forces, have more than twice the number of artillery pieces and heavy mortars as the United States. The PRC

apparently is pursuing a program of artillery standardization having adopted a basic "family" of towed pieces, including the 122 mm and 130 mm guns and the 152 mm gun-howitzer, all of which are mounted on the same type carriage.

In 1974, new self-propelled 122 mm and 152 mm howitzers were identified in Soviet units. Their superior cross-country mobility and reduced vulnerability, compared to towed weapons, makes them far more capable of supporting fast-moving armor operations. The Soviet 152 mm howitzer looks like the U.S. M-109 155 mm howitzer and has similar characteristics.

To help counter the Soviet and PRC numerical superiority in artillery weapons, the United States is pursuing a number of improved cannon systems with increased range and new munitions capabilities. A particularly revolutionary development is the Army's laser-guided Copperhead artillery projectile which is designed to hit a moving or fixed target with a single shot. When the general support rocket system and the nonnuclear Lance missile are fielded they will help offset the numerical superiority in Soviet artillery weapons.

The U.S. and U.S.S.R. ground forces will each face an air threat in the 1980s consisting of large numbers of versatile, well-equipped, fast and maneuverable aircraft possessing electronic devices to neutralize defense systems and capable of delivering ordnance with extreme accuracy.

To meet this threat, the Soviets have deployed several surface-to-air missile systems, the SA 4, 6, 7, 8, 9, which are designed to provide better coverage for their ground forces.

The Middle East War clearly established that a land army in defense of itself against air attack by employment of sophisticated mobile, integrated surface-to-air missile systems can destroy many attacking aircraft. It is, therefore, particularly important that the United States move ahead with a more mobile, capable, and responsive family of battlefield air defense weapons.

The Nike Hercules and basic Hawk surface-to-air systems reflect 15 to 25-year old technology and are relatively costly to operate and maintain. As a result, the basic Hawk is presently being replaced by the improved Hawk system. Both systems, the improved Hawk and the Nike Hercules, are programmed to be replaced during the 1980s by the Patriot, formerly known as SAM-D. The Patriot will have the capability of engaging a number of targets simultaneously and of maintaining its effectiveness in the face of enemy countermeasures. It will require less maintenance and fewer operating personnel than our present systems. The proof-of-principle test program has been completed successfully, demonstrating the track-via-missile (TVM) guidance principle. Patriot entered full-scale engineering development in early FY 1977.

To complement Patriot in the forward battle area, the Roland II surface-to-air missile program is in the development cycle and will provide an all-weather, day or night, low-altitude capability. The U.S. Roland will replace the Chaparral missile in active components. The man-portable SAM system, Stinger, is being developed to replace the shoulder-fired Redeye missile and will engage both incoming and outgoing aircraft.

A new Low Altitude Forward Area Air Defense (LOFAAD) gun development is being initiated to replace the Vulcan air defense gun. The LOFAAD will be an optic sight and radar-aimed, medium caliber, air defense gun system mounted on a tracked vehicle. These battlefield air defense systems will provide effective air defense for U.S. forces in the field. Increased U.S. SAM capability will be particularly important when the sophisticated Soviet tactical air threat is fully implemented.

The Soviet Union deploys Snapper, Sagger, and Swatter antitank missiles which are generally ground or vehicle mounted.

U.S. Army and Marine Corps forces are continuing to improve their antitank capabilities with the addition of the tube-launched, optically tracked, wire-guided (TOW) antitank missile which can destroy enemy tanks, armored vehicles and field fortifications to an effective range of 3,000 meters. If a helicopter platform is used, the range is increased to 3,750 meters. The TOW replaces the 106 mm recoilless rifle in the U.S. infantry battalion.

The Dragon, being introduced in U.S. ground forces, is a man-portable, antitank weapon system utilizing a line-of-sight command guided missile. It is capable of defeating the heaviest known armored vehicle. The Dragon weapon will be organic to all infantry companies and will provide antitank or assault fire at ranges of 60 to 1,000 meters. It will replace the 90 mm recoilless rifle. The first unit so equipped became operational in Europe in March 1975.

Although basic development for the TOW and the Dragon is complete, development of the thermal-imaging night sight for both systems will provide a 24-hour operational capability.

While the PRC, to DoD's knowledge, has not yet developed an antitank guided missile system, it does have a large inventory of crew-served weapons, particularly a Chinese-designed 82 mm recoilless gun, and thousands of rocket-propelled antitank grenade lauchers.

In addition to our numerical advantage, U.S. helicopters are superior in design to the Soviets'. However, as with other conventional forces, improvements continue. There has been a buildup in the number of Soviet MI-8/HIP transport helicopters.

The United States, on the other hand, is continuing development of the Advanced Attack Helicopter (AAH) and will initiate procurement of the Utility Tactical Transport

Aircraft System (UTTAS). The AAH will be an integrated helicopter weapon system which will provide a night/adverse weather antitank capability not presently available. The AAH will enhance our overall antitank capability by providing a means of countering the growing armor threat of the Warsaw Pact nations. The AAH will have a crew of two and will be armed with the Hellfire antiarmor missile system and a 30 mm cannon. It will be armored against the 12.7 mm projectile and will include battlefield survivability features.

Until the AAH is available, the AH-1S attack helicopter will provide our ground forces additional antiarmor capability. The AH-1S is the standard AH-1G (COBRA) helicopter, with an improved engine, transmission, drive train and TOW subsystem. Upon fielding of the AAH, the AH-1S will remain in the inventory but assigned to lower priority active and Reserve component units.

The UTTAS will be the Army's first squad-carrying, assault-lift helicopter and will replace the current UH-1 in the assault helicopter, air cavalry, and aeromedical evacuation units.

Soviet Tactical Bridging Capability

The Soviet tactical bridging capability to conduct offensive operations in Europe is worth noting. In line with their offensive doctrine, the Soviets envision quickly crossing the many north-south water obstacles in Western Europe. They have devoted considerable resources to river crossing equipment and have developed and deployed a revolutionary bridge, the PMP. Using this bridge, the Soviets can span a river the size of the Rhine in about half an hour. A river crossing capability is built into most Soviet combat vehicles. Thus, the standard Soviet personnel carriers can swim, and all Soviet tanks can snorkel across obstacles up to 20 feet in depth.

The Soviet Union appears committed to maintaining a numerical advantage in Europe. Their current emphasis on improving the quality of their ground forces is disturbing. The Joint Chiefs of Staff have been concerned for several years over the risk in NATO's conventional capability to meet a Warsaw Pact attack. The programs enumerated for the modernization and improvement of our ground forces are necessary for a continued successful deterrent, and if we are to retain the qualitative superiority necessary to preclude the early use of tactical nuclear weapons in the event of war.

Naval Forces

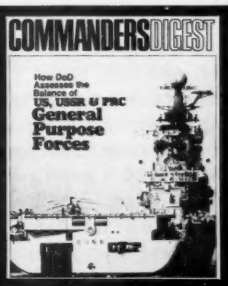
The dominant geopolitical characteristic of the United States is its insular nature. Nearly all of our major allies are overseas. In contrast, our most likely adversaries are primarily land powers having land boundaries with most of their allies. While the oceans represent broad defensive barriers, our dependence upon them for commerce and communications, and for strategic force deployment and support, highlights the importance of the maritime area.

The U.S. Navy contributes to strategic nuclear deterrence, provides naval components of U.S. forces overseas to protect our national interests and support our allies, and ensures the security of the sea lines of communication. These latter responsibilities are divided into the broad categories of sea control and power projection. Sea control is control of the air, surface, and subsurface area in the time frame and degree necessary for accomplishment of specific operations at sea. Power projection covers a spectrum of offensive naval operations including tactical employment of carrier-based aircraft, amphibious assault and naval bombardment of targets ashore in support of sea or land campaigns.

In addition to its strategic nuclear mission, the Soviet Navy's primary mission is control of the seas around the Soviet Union and denial of sea lines of communication to potential enemies.

The respective roles of sea control and sea denial are reflected in the naval force structures and ship designs of the United States and the Soviet Union. The new Soviet heavily armed surface combatants, the increasingly sophisticated submarines, and the substantial missile capable naval air forces present a growing threat to our sea lines of communication and the projection of our military power.

Moreover, the changing Soviet naval force structure reflects an expansion from the conduct of peripheral area sea control to the conduct of more extensive sea denial operations over, on and under the sea. The Kiev class aircraft carrier, well equipped for antisubmarine warfare (ASW), capable of providing tactical air support to forward deployed Soviet naval vessels and submarines, and with a potent antiship capability in its missiles, adds an impressive dimension to Soviet naval power. New classes of underway replenishment ships, a new class landing ship (LSD/LPD) and new classes of fast turn around, roll-on/roll-off, float-on/float-off merchant ships, will allow more sustained freedom of movement by Soviet naval forces in distant areas. The current reality of the Soviet Navy is that it is growing as a global force.



COVER: A stern view of the Soviet aircraft carrier Kiev underway. This carrier, though not comparable to U.S. carriers, is the largest combatant ever built by the Soviets, and represents a significant increase in their naval capability.

Vol. 20, No. 4
February 17, 1977

A publication of the Department of Defense to provide official and professional information to commanders and key personnel on matters related to Defense policies, programs and interests, and to create better understanding and teamwork within the Department of Defense.

Published bi-weekly by the American Forces Press Service, 1117 N. 19th St., Arlington, Va. 22209, a unified activity of the Office of Information for the Armed Forces, OASD (PA). Reproduction of content is authorized.

Telephone: (202) OXford 4-5070
Autovon 224-5070

The number of Soviet major surface combatants is expected to decrease slightly over the next decade as older units are retired and not replaced on a one-for-one basis. The bulk of these retired units will come from classes which are not normally used in distant deployments. The Soviet fleet is expected to improve dramatically as more missile-equipped units with a better capability for extended operations are added.

The Soviets currently have about 250 operational general purpose submarines plus units in reserve. Included are nuclear and diesel powered cruise missile units and torpedo attack units. It is the largest such force in the world. Active Soviet operational submarines outnumber U.S. general purpose submarines by some 180 units. Although the force is projected to decline, the proportion of nuclear powered units will increase and will become more reliable, somewhat quieter, and be equipped with more effective sensors and weapon systems. All of these improvements will give the Soviets a substantial overall capability for submarine warfare, and increase the United States' ASW requirements.

Of the approximately 500 intermediate range bomber aircraft assigned to Soviet naval aviation, about 290 are Badgers equipped to carry air-to-surface missiles, with a balance of the force made up of Backfires, Blinders, and Badger tankers. The ultimate size of the Badger inventory is expected to be at least partially dependent on the number of Backfire bombers introduced into the naval air strike force.

Surface Ships

The main strength of the Soviet surface fleet lies in its flexibility, derived from increasing numbers of large and relatively new, well armed, high-speed ships having excellent communications and electronic warfare capabilities and equipped with offensive and defensive missile systems capable of firing both nuclear and conventional ordnance. Current major surface construction and modernization programs indicate Soviet emphasis on improving open ocean capabilities.

Modern Soviet ships are more heavily armed than their Western counterparts and carry more gun and conventional ASW ordnance. Many are equipped with long-range antiship cruise missile systems which pose a significant threat to Western ships. Soviet ships are essentially designed for short, intense engagements rather than for staying power. Their antiship missiles have a good capability for the initial exchange. While air filtration systems and other chemical, biological and radiological (CBR) measures for crew protection have been provided, Soviet ships have poor habitability. Damage control and underway replenishment capabilities are inferior to those in our ships. Few Soviet ships have sonars comparable to those common in the West. Their sonars, however, are being upgraded.

In the area of major surface combatants, Soviet naval forces consist of one new missile ASW carrier, two guided missile helicopter ships, 21 missile cruisers, 10 gun cruisers, 34 missile destroyers, 53 gun destroyers, and 107 frigates, for a total of 228 ships. Included are 18 major surface combatants undergoing overhaul or conversion. This force will decrease slightly in numbers through the 1980s; however, with the continuing addition of heavier and more complex ships, the force's capabilities will continue to increase.

The PRC inventory of principal surface combatant ships, although small, is growing. The bulk of the surface force consists of small combatants such as missile-attack, torpedo and gun boats, and submarine chasers. The continued construction of missile-attack boats and submarines and the development of small naval bases and support facilities, some underground, stress the importance assigned to coastal defense.

The decline in the number of U.S. major combatant surface ships is programmed for reversal.

The aircraft carrier forms the heart of naval task groups for both sea control and projection of power ashore. We are actively seeking ways to increase the offensive capabilities of other surface combatants to complement the reduced number of carriers in the active inventory.

A new, nuclear powered strike cruiser (CSGN) is one means of meeting this goal. Carrying the Aegis missile system for countering hostile aircraft and missiles, a long range tactical Tomahawk (surface-to-surface) missile, the Harpoon missile for shorter ranges, an 8-inch gun, hull mounted and towed array sonars and several vertical-take-off-landing (VTOL) aircraft, the CSGN will be capable of independent and task force operations in high threat areas.

The Navy continues to program less expensive, specialized ships, such as guided missile frigates, for specialized missions. In addition, to overcome present deficiencies in our mine countermeasures forces, the Navy has intensified research and development (R&D) efforts in this important area.

The Soviet naval modernization program has introduced a number of new classes of combatants.

In mid-July 1976, the first Kiev class aircraft carrier deployed to the Mediterranean Sea. After 15 days of operations, it moved to the Atlantic and then the Barents Sea where it continued operational trials including firing of antiship cruise missiles. This initial deployment provided operational training for both ship and aircraft crews, and afforded the opportunity to operate its vertical-short-take-off-landing (VSTOL) aircraft. A second carrier in the Kiev class is fitting out. A third ship in this class is under construction.

The Kiev is not militarily comparable to U.S. carriers. Nevertheless, it is the largest combatant ever built in the Soviet Union and represents a significant increase in their

aval capability. It is expected to carry a mixed air wing omplement of VSTOL aircraft and helicopters totaling 36 aircraft. Fitted with surface-to-air and urface-to-surface missiles, antisubmarine rockets and orpedoes, and various gun systems to perform antiship, ntisubmarine and antiair missions, the Kiev is indeed a attle carrier.

Four Kara class light cruisers are now operational and onstruction continues on this class. This is the largest gas urbine combatant in the world and has two different air efense missile systems, the SA-N-3 and SA-N-4. The A-N-3 also has some antisurface capability.

The other guided missile cruiser class still in production s the Kresta II. Eight are deployed, one is working up and ne is fitting out. The Kresta II class is steam turbine owered, thereby more economical to operate than the Kara, and is normally deployed to distant areas.

Following these classes of light cruisers is the Krivak lass destroyer, which for its size is the most heavily armed ombatant in the world. Only 124 meters (405′) in length, his destroyer has surface-to-air missiles, ASW cruise issiles, four 76 mm guns, and torpedoes.

A new missile cruiser and/or destroyer will probably ollow these classes in the early 1980s, and probably will be esigned for both air defense and antisubmarine warfare.

The Kashin class guided missile destroyer joined the oviet fleet in 1963. This was the first major combatant in he world powered by gas turbines. Construction of this lass has ended, but limited numbers have been or are now ndergoing a modification.

Soviet surface combatant construction program has teadily improved Soviet naval capabilities. A modest rate f construction is expected to continue. What we see in the uture for the Soviet surface combatants is a continuing ntroduction of new classes using updated technology to mprove propulsion, electronic countermeasures and veapon systems. This is not to say that the systems of today vill become obsolete. Through refit and modernization, the ewer classes in operation now will probably be with the oviet Navy for the next 10 years.

Submarines

The U.S.S.R. will continue to have the world's largest ubmarine force and is expected to continue replacing older ubmarines with newer, more effective units. We expect the urrent decline in numbers of diesel powered submarines to ontinue.

The Soviet torpedo attack submarine force consists of 188 ctive submarines with an additional number in reserve. Only 36 of the active units are nuclear powered, while two uclear powered submarines are in a reserve status.

Three classes of Soviet torpedo attack submarines are urrently under construction. Two are nuclear powered and ne is diesel powered—the Victor, the Tango and the oxtrot.

Operationally, Foxtrot class diesel attack submarines continue to constitute the bulk of the Soviet submarine force.

Operations of cruise missile submarines in 1976 have centered on the diesel powered Juliett class, which is reliable although not extremely sophisticated, and the Echo II class.

The submarines of the PRC Navy represent the third largest underwater fleet in existence. This force consists of 65 diesel attack submarines plus one diesel powered ballistic missile submarine which is employed as an R&D platform for submarine ballistic missile development, and one, probably nuclear powered, attack submarine. The main weakness of this force is that it is still at a comparatively elementary stage of technical and tactical development.

This submarine force provides the PRC with the capability to project its naval strength at greater distances.

After a long decline, U.S. attack submarine force levels are now on the rise with the introduction of the first 688 class submarine. The U.S.S. Los Angeles (SSN 688) was commissioned in November 1976. With Congressional approval for the acquisition of 31 of the 688 class submarines, their construction will continue until at least the mid-1980s.

This modern nuclear attack submarine will provide direct support and protection to carrier task groups, convoys, and other high value units and will, as an open ocean hunter, engage enemy submarine and surface forces. Initial sea trial results of the U.S.S. Los Angeles are encouraging. The ship exceeds design speed specifications by more than two knots, while showing overall improvements in sound quieting. The introduction of the Harpoon and Tomahawk submarine launched cruise missile will provide U.S. SSNs a medium- and long-range antisurface ship capability. New sonar detection and ranging developments, such as the wide aperture array sonar for rapid target localization and the towed array sonar system for long-range target detection, will increase the combat capability of these ships.

The programmed construction rate is five SSNs every two years through the early 1980s.

Missiles

Curise missile technology, especially in propulsion, guidance, and control systems, has undergone a dramatic change in recent years. These weapons are capable of employment in both sea control and power projection roles and are adaptable to a variety of surface, air, or submarine launch platforms. The multi-platform employment capability of the cruise missile offers flexibility for structuring and deploying highly capable offensive or defensive forces.

Two new missiles are being developed for introduction into the Fleet: the Harpoon, an antiship cruise missile; and

the Tomahawk, a cruise missile designed to carry out both antiship and land attack missions.

The Harpoon, a highly effective all-weather missile, is to be the primary antiship weapon system for our naval forces. This adaptable weapon is planned for installation in virtually all of our surface combatants; nuclear attack submarines, and shore and carrier based aircraft including the Navy's P-3 and A-6. The ability to employ Harpoon in other patrol and attack aircraft as well as the Air Force B-52 bomber has been validated and offers the option for expanded deployment of this system.

The basic Harpoon, which is common to all three launch platforms, is powered by a turbojet engine and after launch descends and ingresses at 100 feet above the water. This sea-skimming flight profile, along with an effective active terminal guidance radar, ensures a high probability of penetrating enemy defenses and mission success. The missile has a maximum range of 60 nautical miles and has demonstrated excellent hit probabilities against destroyer-size targets out to this range with a highly efficient 500-lb conventional warhead. The missile is sized for maximum compatibility with launch systems for existing missiles such as Tartar, Asroc, and the Standard missile. A low-cost canister launch system is also available. Compatibility with submarine torpedo tubes is achieved by means of an adapting capsule.

Harpoon is currently undergoing operational evaluation. Delays in completion and subsequent fleet introduction have resulted because of reliability problems being experienced with the pilot production missiles. An intensive effort to resolve these problems has validated the missile design and introduced additional quality assurance and acceptance procedures into the production line.

Tomahawk is being developed as an all-weather, long range, high subsonic cruise missile designed to fit submarine torpedo tubes. Available in both land attack and antiship versions, Tomahawk is capable of launch from submarine, surface ship, land and air platforms.

The land attack version will be capable of delivering a nuclear warhead against any land target out to 2,000 nautical miles. It represents a powerful augmentation to the United States' theater nuclear capabilities. Equipped with Terrain Contour Matching navigation system, the land attack Tomahawk will follow flight paths designed to avoid enemy defenses by flying at very low altitudes below enemy radars. This, coupled with terrain masking and low radar and infrared (IR) cross sections, will make it extremely difficult to defend against.

The antiship version will be capable of delivering a conventional warhead against enemy ships out to 300 nautical miles with sufficient endurance to conduct a target area search in the event of any enemy post-launch maneuver. The antiship Tomahawk will employ a modified Harpoon guidance active seeker system and also will have the option of passive capability to identify and home on pre-designated enemy warship radars. Tomahawk terminal maneuvers will be optimized to penetrate enemy defensive systems.

Both versions of the Tomahawk are powered by a turbo-fan engine for greater range and efficiency.

Since the late 1950s the Soviets have employed cruise missiles on their submarines, surface ships, and aircraft as antiship weapons. Refinements during the early 1960s are now being supplemented and replaced by still newer systems. Continued development of Soviet shipborne missile capabilities is expected during the next decade. Older missile systems will be replaced by more modern ones capable of operating in a greater variety of environments and with better performance.

Most Soviet naval cruise missiles have terminal homing.

The Soviets have in the past few years developed a family of ASW missiles for launch from surface and subsurface platforms.

The United States projects development of these or similar ASW missiles on future classes of Soviet general purpose submarines.

The SA-N-3 SAM is an air defense weapon utilized in principal surface combatants such as the Kiev carrier, and

---

"The challenge of meeting manpower requirements of the active forces on a voluntary basis has been successfully accomplished since termination of the draft. The active forces have managed to recruit on the average more than 400,000 non-prior service personnel annually with recruit quality, measured in terms of high school completion and mental category, remaining at or above recruit quality experienced during the draft years."

—VADM JOHN G. FINNERAN *Deputy Assistant Secretary of Defense (Military Personnel Policy),Office of Assistant Secretary of Defense (Manpower & Reserve Affairs), before the House Subcommittee on Military Personnel, February 3, 1977*

"The FY 1978 budget suggests that the manner in which the Department of Defense will budget for military retirement liabilities should be changed. Because of the complexity of the changes, it was proposed that the new system begin with the FY 79 budget. Under this proposal, the full costs of future defense retirement payments for currently active military personnel would be charged to the Department of Defense. These estimates would reflect the anticipated pay and price increases, which influence the size of military pensions."

—JOHN F. AHEARNE *Former Principal Deputy Assistant Secretary of Defense (Manpower & Reserve Affairs), before the House Subcommittee on Manpower and Personnel, February 7, 1977*

the Kresta II and Kara cruisers which have entered the force since 1968.

The SA-N-4 is an integrated radar, fire control, and missile system for close-in point defense against aircraft and possibly cruise missiles.

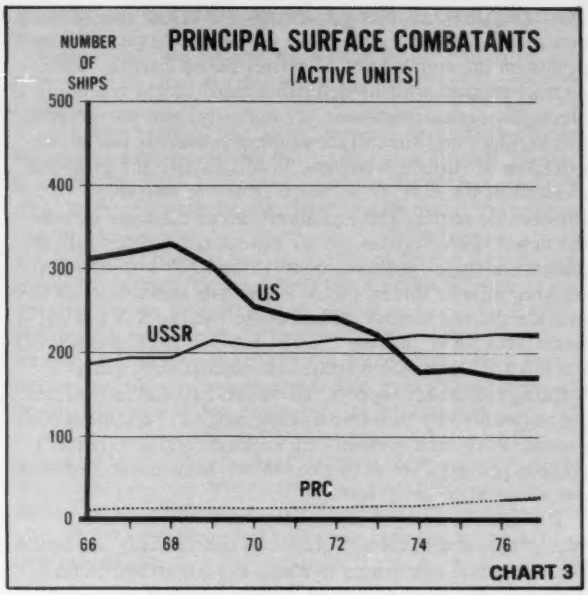
Soviet Naval Aviation (SNA) aircraft, with both a nuclear and a conventional standoff antiship missile capability, are a major threat to our ships. These strike aircraft are supported by long- and intermediate-range reconnaissance, electronic countermeasures (ECM), and tanker aircraft. In addition to the strike mission, Soviet Naval Aviation places emphasis on maritime patrol and ASW missions.

The primary air threat to U.S. Navy surface operations is the Soviet naval air force composed of about 290 air-to-surface missile (ASM) equipped Badgers, supersonic Backfire ASM bombers, and Blinder conventional bombers. These aircraft are supported by intermediate- and long-range reconnaissance and ECM aircraft, plus a Badger tanker fleet. The intermediate-range May patrol aircraft, short-range Mail patrol aircraft, and the Hound, Hormone, and Haze helicopters fill out a powerful balanced force.

The introduction of Backfire into the Soviet Navy in late 1974 significantly enhanced the range and overall strike capability of SNA. Backfire is superior to Badger and Blinder in overall performance, range, speed and maneuverability. Although some difference of opinion exists concerning the maximum unrefueled range of Backfire, it will, nevertheless, strengthen the Soviets' antiship strike capability. Some Backfire probably will be deployed in a long-range reconnaissance.

The open-ocean ASW capability of the SNA consists primarily of May, Bear F and Mail amphibians. The May's patrol endurance compares favorably with the U.S. P-3 Orion. May and Mail have magnetic anomaly detection capabilities.

SNA has Fitter-C fighter bombers assigned to the Baltic Sea area that could be used in limited antiship strike roles or to support amphibious operations in that area.



SNA's ASW helicopter force consists of Hormone A and B, Haze, and Hound helicopters. The Haze is currently being deployed in a land-based ASW role as an apparent replacement for the Hound.

An added dimension was introduced to SNA in 1976 when a Soviet seaborne naval fighter was deployed aboard the Kiev battle carrier. It is the YAK-36/Forger which may be capable of multi-purpose roles such as fleet air defense, ASW, strike, close air support and reconnaissance.

To counter the three dimensional sea denial capability of Soviet forces, the U.S. Navy relies heavily on naval

WHAT THEY ARE SAYING...

"The continuing growth in Soviet military power, and in particular the substantial improvements in their forces deployed in Eastern Europe, has caused us to look to our defenses to ensure that NATO keeps pace with the potential threat and that the deterrent is maintained."

—**EUGENE V. MCAULIFFE** *Assistant Secretary of Defense (International Security Affairs) before the Senate Armed Services Committee, February 8, 1977*

aviation. The U.S. Navy's ability to gain and maintain control of selected high threat sea areas and to project power pivots on the capabilities of carrier-based aircraft. The aircraft carrier, with its defensive capabilities, including electronic countermeasures, its mobility, and its versatile air, surface, and subsurface striking power, is the most effective of surface warships. It will remain the principal element of the U.S. Navy force structure into the foreseeable future. The embarked carrier air wing includes the new F-14A Tomcat, an air superiority fighter with the Phoenix missile system to combat the SNA's Backfire and antiship missile threat; the A-7 and A-6 attack aircraft to provide the sea control strike capability; the S-3 and SH-3 aircraft for ASW; and the EA-6B, RA-5C, E-2C and KA-6D aircraft for electronic warfare, reconnaissance, early warning and tanker support. These sea-based aviation forces are augmented by land-based, long-range P-3 aircraft which provide ASW and surveillance support. Naval aviation's combat-proved war fighting capability is the cutting edge of our sea-control naval forces.

The present combat capabilities of Soviet surface, subsurface, and naval air forces can substantially influence Western naval operations in many key areas and could dominate the initial stages of certain types of conflicts. Soviet surface ships, however, are considered particularly vulnerable to concerted Western air or submarine attack.

In the judgement of Gen. George S. Brown, USAF, Chairman of the Joint Chiefs of Staff, the U.S. Navy continues to be superior to the Soviet Navy at this time. It is superior in capability to project sea-based power, and the quality of the attack submarine force is superior to that of the Soviet Union. Current capability of the United States to control the essential sea lanes versus that of the Soviet Navy to deny the United States their use is far more difficult to assess with assurance. General Brown believes, nonetheless, that the United States could prevail in the most likely situations. His concern rests with the momentum of the Soviet Union's expanding naval capabilities. There is no question that the capabilities of Soviet naval forces are growing. This is of real concern when looking to the future.

Tactical Air Forces

Since the late 1960s the capability of the Soviet and Warsaw Pact theater air forces has grown in numbers and developed in quality.

During this period, the U.S. tactical aircraft total inventory dropped below that of the Soviet Union. The U.S. trend has now been reversed and should parallel the Soviet trend, remaining approximately 1,000 below their total tactical operating aircraft.

In tactical aircraft inventories, the U.S. figures include both active and reserve aircraft in the Air Force, Navy, and Marine Corps, but exclude those used for training (about 900 in 1975) and those assigned to Continental Air Defense (about 285 in 1976).

Also excluded are aircraft used in research and development, test and evaluation, and as attrition spares.

The Soviet inventories similarly exclude tactical-type aircraft used for training (about 3,000 in 1976) and fighter aircraft assigned to the PVO Strany Forces Air Defense of the nation (about 2,600 in 1976). However, some of these aircraft should be diverted to the tactical role.

Soviet tactical aviation has offensive capable tactical air units in the U.S.S.R. and with the four Groups of Soviet Forces in East Germany, Czechoslovakia, Poland, and Hungary. The primary role for Soviet tactical aircraft is against Central NATO, with Southern NATO and the Far East accounting for the bulk of the remainder.

In the PRC, most fighter aircraft, about 4,000 in 1976, are assigned to strategic home defense mission. The PRC figures, therefore, include only the tactical aircraft, fighter-bombers and medium bombers in the active inventory of the air force and naval air force. However, home defense interceptor units participate in ground support training exercises. It is believed that as many of these strategic home defense aircraft as required would be utilized, whenever necessary, in a tactical role. No reserve aircraft figures are available for the PRC.

Trends

The U.S.S.R. traditionally has emphasized air defense in its tactical air forces and has a clear quantitative advantage over the United States in this category. Soviet concern for eliminating the shortcomings of its tactical air forces for conventional warfare in the ground attack role has resulted in a new generation of aircraft and weapons.

The developmental work of the mid-1960s on new and more capable fighter bombers initially produced new versions of the MIG-21/Fishbed fighter with improved payload and range for more effective, offensive roles. Then beginning in 1973, the new SU-17/Fitter C, the MIG-23/Flogger B and the SU-19/Fencer A became operational. Compared to earlier Soviet tactical fighters, these new aircraft have substantially improved range, payload, avionics and electronic countermeasure capabilities, thereby providing a multiple mission potential. The new types now comprise a significant portion of the force.

The Flogger and Fitter C are capable of striking targets in most of NATO Europe from bases in the western U.S.S.R., especially if they recover to bases in Central Europe. During sustained conventional operations, maximum use of their payload and range capabilities could be made if those Flogger and Fitter C aircraft currently in the western U.S.S.R. would deploy to forward bases.

On the other hand, Fencer, the most advanced tactical aircraft in the Soviet inventory, is capable of conducting nuclear strike missions from bases in the western U.S.S.R. against European targets. The effectiveness of the ordnance that the Fencer can deliver will be greatly increased over that of the Beagle and Brewer which it will replace.

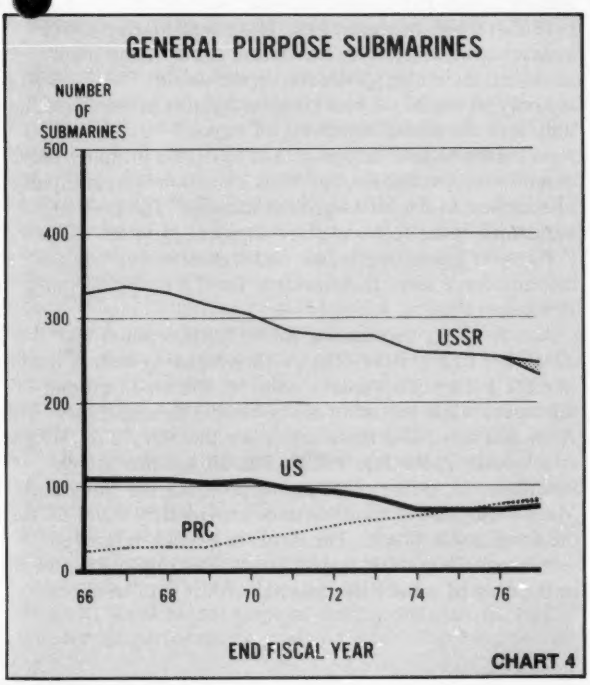
The 2,150 mile-per-hour (Mach 2.8) MIG-25/Foxbat-B has substantially improved the reconnaissance capability of Soviet tactical air forces.

The introduction of the Backfire bombers into long-range and naval aviation is improving the ability of these forces to survive NATO's air defenses, particularly at low altitudes.

The Soviets are developing a variety of new air weapons to complement this growing inventory of modern, multi-mission aircraft. Included are improved air-to-air missiles, a family of tactical air-to-surface missiles and bombs. The improved penetration capabilities of the new aircraft coupled with these weapons will greatly increase the potential effectiveness of each tactical air sortie. Soviet tactical air has greatly improved its ground attack capability per individual sortie as a result of this new technology.

The number of Soviet ground attack aircraft have increased from some 800 in 1965 to more than 1,700 today plus several hundred armed assault Hind helicopters. It is estimated that the number will remain at about this level.

The primary improvement in overall Soviet tactical air ground attack capability comes with the replacement of short-range limited payload aircraft by new Fitter, Flogger and Fencer fighter bombers with nearly double the payloads and greater range. These aircraft are major improvements over their Soviet predecessors, not only in range and payload, but also in subsystem capabilities.



Tactical Air Threat Against NATO

Since 1973, the Soviets have been phasing-in third generation tactical aircraft into their forces in Eastern Europe.

This upgrading of the Soviet tactical air units in Eastern Europe with the multi-role third generation aircraft, Flogger B, C, Fishbed J/K/L, Fitter C, and Foxbat B, has provided them with significantly improved aircraft range and payload capabilities.

The latest phase of the upgrading of Soviet tactical air force inventories opposite NATO's Central Region in Eastern Europe is nearing completion.

The U.S.S.R. is deploying an integrated structure of mobile air defenses with its field forces based on a high density of SAM sites and antiaircraft guns. These defenses provide improved low-altitude point and limited low-altitude area protection as well as comprehensive coverage at other operational altitudes. This organic ground force tactical air defense capability, together with anticipated improvements, will lessen Soviet dependence on aircraft for air defense and free some counterair fighters for other missions.

New mobile tactical SAMs deployed with the ground forces have largely taken over air defense responsibilities. This not only permits counterair fighters more flexibility, but also permits Soviet frontal aviation forces to concentrate more on independent ground attack operations.

Previously the Soviet Strategic Bomber Force Long Range Aviation was expected to carry the main burden of an attack on Western Europe. Now frontal aviation can augment this force, especially in escort and defense suppression roles. When viewing the role of the Backfire in an attack on Western Europe, the Soviets are seen to be developing new alternatives in their ability to attack Western Europe with improved conventional munitions as well as with nuclear weapons.

There are also changes in Soviet tactical aviation's role in a nuclear conflict. During the 1960s, tactical aviation's nuclear role declined, with emphasis being given to surface-to-surface missiles. Now, recent evidence indicates a resurgence of the use of tactical aviation as a flexible means of optional nuclear delivery. Fishbed-J/K/L, Flogger-B, Fitter-A/C and Foxbat B are all believed to have an air-to-ground nuclear delivery role. Fencer-A and Flogger are without question nuclear capable.

These changes in doctrine are supported by the aircraft entering the force. The newer aircraft are better able to conduct air-to-ground operations. Airborne electronic countermeasure capabilities are being upgraded. More weapons can be carried, and new weapons such as hardened target penetrators are being developed.

The number of U.S. tactical aircraft, after declining for several years, will begin to increase if approved programs are fully funded. While the numerical advantage remains with the Soviets, the United States' substantial

modernization program reduces its impact. Nevertheless, rising costs associated with high-performance aircraft continues to slow U.S. force modernization efforts. The Soviet Union has introduced a series of high-mix aircraft, which are significantly more sophisticated and capable than earlier models. The Fencer, Foxbat, and Flogger are representative of this quality.

The United States' high-mix aircraft, the F-14 and F-15, remain the two most capable fighters in the world. Because of their technological superiority, they will dominate all other types of fighter aircraft in the air-to-air arena for the foreseeable future. Their primary role is to attack and destroy the enemy air threat to provide localized air superiority over the land or naval battle area. Having a sufficient number of these high-mix aircraft is critically important, enabling the United States to defeat the growing numbers of sophisticated Soviet high-mix aircraft capable of employment in every major theater.

The quality found in these high-mix aircraft does not adequately offset the fighter forces' quantitative deficiency. As noted, the high cost of such aircraft precludes sufficient procurement to fully equip the total fighter force. This originated the high-low mix concept and is the underpinning to the USAF F-16 program as well as the Navy/Marine F-18/A-18.

While the design of both the F-16 and F-18/A-18 was optimized for close range air-to-air combat, the resulting high engine thrust and low wing loading characteristics have been exploited to provide an air-to-surface capability without detracting from the aerial fighter qualities. Thus, the aircraft will be multi-mission capable, enabling their employment first to quantitatively complement the more sophisticated F-14 and F-15, and secondly, to provide firepower in support of the air-to-surface attack mission. Thus, an economically attainable and qualitatively acceptable solution to modernize and expand the tactical air fighter force has been achieved.

Fighter/Attack Aircraft

The newer generation MIG-21/Fishbed-J/K/L series is the backbone of tactical aviation with a large number deployed in Soviet units in the forward area and in the U.S.S.R. Additionally, Fishbed-J export versions are assigned to Warsaw Pact allies of which most are in the air defense of the homeland role. In addition, Fishbed-L are assigned to the homeland air defense forces. These newer Fishbed are cannon equipped, carry up to double the air-to-air weapons load of the previous D/F versions, and have greater fuel loads to extend their combat radius.

The Flogger-B fighter will soon displace the Fishbed as the primary air-to-air tactical weapons system. The Flogger is currently deployed with Soviet forces in the forward area and in the Soviet interior. The weapons avionics and fuel payload of the Floggers are all superior to those of the Fishbed. The reintroduction of the integral cannon on Soviet fighters which began with the Fishbed-J remains a feature common to all new generation tactical aircraft. The MIG-23/Flogger was first deployed in 1970, and has deployed in accelerated numbers since 1973. It is now present in Soviet units throughout the U.S.S.R. and [illegible] Warsaw Pact.

The swing wing SU-17/Fitter C ground attack fighter represents a major improvement over the earlier Fitter models.

The Sukhoi interdiction fighter-bomber, the SU-19/Fencer-A, entered operational service for the first time in December 1974. The Fencer is the first modern Soviet aircraft that provides for a weapons system officer. The Fencer carries a variety of guided and unguided air-to-ground weapons and appears to be the first Soviet fighter specifically designed for ground attack.

Significant additional deployments of the reconnaissance version of the MIG-25, the Foxbat B, have been continuing.

The plan for the modernization of the naval tactical air forces continues. In the case of fighters, F-14 procurement is presently planned for a total of 509. The F-14 completed its third full-scale deployment on board the U.S. S. America in October of 1976. The six-month deployment surpassed the operational readiness statistics of prior cruises. The F-14/Phoenix weapons system reliability continues to improve and adds an operational capability to the fleet which is a quantum increase over that provided by the F-4.

The remainder of the F-4 force for the Navy will be replaced by the F-18 commencing in 1983. F-18/A-18 full-scale development program commenced in December 1975 with the first development test flight scheduled for July 1978. The initial operational capable squadron for the Marine Corps is FY 1982 and the Navy in FY 1983. F-18/A-18 will modernize the Navy and Marine Corps aviation with aircraft incorporating some of the more advanced technology available in the world. The F-18 will not only be one of the best close-in fighters in the world, but will have the added capability of beyond-visual-range missiles for an air intercept role. The F-18's primary role is that of an escort fighter, but it has a weapon system capable of adapting to the air-to-ground mission. The present indicators in the full-scale development program show the F-18 to be highly survivable and cost effective while meeting force level requirements for the mid-1980s and 1990s.

The A-18 is programmed for an initial operational capability in FY 1984. The A-18 weapon system is much like the F-18 but optimizes more for the air-to-ground missions, while retaining air-to-air missile capability. The A-18 will serve as a replacement for the Navy's A-7E light attack force in the late 1980s. The all-weather attack functions, including close air support, for the Navy and Marine Corps, will continue to be provided by the A-6E for the foreseeable future. The A-6E is a much improved version of the combat-tested A-6A. The improvements are in the area of reliability, maintainability and weapons

The AV-8A vertical/short take-off and landing (VSTOL) aircraft will continue to fulfill the Marine Corps' light attack mission until the introduction of the new AV-8B.

delivery accuracy. The A-6E system is currently being further enhanced by addition of the Target Recognition Attack Multi-sensor (TRAM), which includes an infrared sensor, laser ranger/designator and laser receiver. When this is coupled with the A-6E all-weather radar, it will provide the unique capability to acquire, identify, and make a first pass attack on enemy targets using passive sensors at night or in poor weather with laser or electro-optical guided weapons as well as conventional weapons. With the addition of TRAM, the A-6E becomes the most advanced strike aircraft in the Navy's inventory.

The Marine Corps has determined that their fighter requirements would best be met by retaining the F-4 until introduction of the F-18 in 1982. To fulfill Marine Corps light attack missions, the A-4M and AV-8 will continue to be utilized until introduction of the AV-8B. The AV-8A was introduced in 1971 as the first step toward the Marine Corps' goal of freeing its tactical aircraft from runways, catapults and arresting gear. The AV-8A is a Vertical/Short Take-Off and Landing (VSTOL) attack aircraft capable of operating from ships, bombed-out airstrips, roads or grass airfields. With the introduction of the VSTOL AV-8B, this operational flexibility will be extended throughout the Marine Corps' light attack force. The AV-8B will have greater range and payload than the A-4M or AV-8A. AV-8B will carry precision guided munitions and be equipped with the angle rate bombing system. Total planned procurement is 360 AV-8B aircraft. Initial operational capability is programmed for 1984. Much of the AV-8B technology has been derived from operational experience gained with the AV-8A. The AV-8B has reached the full-scale, wind tunnel stage of testing and thus far has exceeded all performance goals.

In the U.S. Air Force, the major changes in the tactical aircraft programmed inventory will result from the introduction of the A-10, the F-15, and the F-16. In addition to active force improvements, the A-10 is programmed for delivery directly into the Air Reserve Forces starting in FY 1979.

The A-10 started phasing into the active forces with the delivery of the first production aircraft in November 1975. To date, we have fully funded the first 195 aircraft with a total planned procurement of 733 aircraft.

The A-10 has been developed as a specialized close air support aircraft. The 30 mm rapid firing gun system has been optimized to destroy armored vehicles, including tanks, at minimum cost. The A-10 is capable of delivering a wide variety of other conventional munitions, including Maverick missiles, Rockeye and laser-guided weapons. Air refueling for a worldwide mobility capability plus long loiter characteristics make the A-10 highly responsive to the needs of our ground forces. The A-10's survivability features have been a primary design criteria. The pilot and critical aircraft components are protected by titanium armor and redundant structure; the fuel tanks are self-sealing and/or protected by foam; and the flight control system has redundancy in critical components. The A-10's maneuverability contributes to survivability and permits operations under the low weather ceilings and in the limited visibility conditions that would be experienced in Europe. It has demonstrated excellent results against Soviet made tanks in extensive testing using the depleted uranium anti-armor 30 mm round.

The F-15 (Eagle), a most capable air superiority fighter, has been flying since July 1972. Its performance has either met or exceeded all expectations. The first operational aircraft were delivered to the Tactical Air Command as scheduled in November 1974 and in the spring of 1977 a wing will deploy to Europe.

The programmed procurement of 729 tactical F-15s will be completed by FY 1981. Their integration into the tactical forces will provide a counter to the increasing numbers of modern sophisticated Soviet aircraft as well as provide the only USAF capability against the Foxbat.

The F-15 was designed primarily to provide an air-to-air combat capability superior to that of enemy aircraft projected for the 1980s. Its outstanding performance characteristics were aptly demonstrated in the "Streak Eagle" tests completed in 1975 when the F-15 broke all existing international time to climb records. A recently approved modification to the F-15 internal fuel system capacity will be included in aircraft produced during FY 1978, giving them a significant increase in internal fuel. The resultant increase in station keeping time of the F-15 will provide either more beyond-visual range firing opportunities or an increase in the number of potential targets that can be engaged.

The F-16 full-scale development program was initiated in January 1975 and the first production aircraft flew on Dec. 8, 1976. Operational units of the programmed procurement of 1,388 aircraft for active and Reserve forces will be introduced in FY 1980 and will continue building through FY 1986. The F-16's exceptional maneuvering and handling characteristics are a demonstration of our advanced technology and will provide superior air-to-air combat characteristics. Prototype flight test results, cost analyses, and projections of operational capability indicate that the F-16 offers a cost effective means of accomplishing the needed modernization and expansion of our tactical air forces. The F-16 will decrease the numerical deficiencies in the fighter force, replace a portion of the older force, and will enable total force modernization by freeing some F-4s for transfer to the Reserves. F-16s are planned for direct delivery into the Reserves in the mid-1980s.

While this new F-16 fighter is designed principally for air-to-air combat to complement the F-15, it will also have a potent air-to-surface weapons delivery capability. Because of the similarity of our requirements with those of our NATO allies, it has been selected by Belgium, Denmark, The Netherlands, and Norway as a replacement for their aging fighter forces. This represents a significant step toward NATO standardization and interoperability among NATO countries and the United States.

The F-16 is a major step in reversing the trend of rising weapons systems procurement costs. The combined force of F-15s and F-16s form an affordable and capable "high-low-mix" tactical air fighter force. By moving toward a force structure composed of both types of air superiority aircraft, we will be able to maintain a larger force for equivalent budget expenditures, and reduce the problems of block obsolescence now being experienced with the large F-4 fleet. This larger mixed force of six F-15 wings and 10 active F-16 wings and eight F-16 Reserve squadrons will also reduce the quantitative advantage of the Warsaw Pact countries without placing our forces at an unacceptable qualitative disadvantage.

Aviation Ordnance

The Soviets are also developing a broad variety of sophisticated new weapons similar to U.S.-made armament effectively employed in South Vietnam and the Middle East.

The mission of the Soviet air forces in Europe would be to attack NATO airfields and similar targets and to use some missiles as standoff weapons against radars.

Although U.S. information is incomplete, DoD believes that we currently enjoy a considerable edge over the Soviet Union in the military application of this particular type of technology.

This Nation's edge in this technology is a major part of the margin of U.S. superiority. It must be ensured that the United States is capable of holding it over time. The continuation of development programs in this field is essential if Defense is to provide the American soldier the air support he requires to survive on a battlefield where he is likely to be outnumbered.

Precision guided munitions which raise the single shot kill probability and reduce the scope and duration of the combat exposure of the delivery vehicle produce a significant advantage. This is one of the clear lessons of the direct experience in Southeast Asia and observation of the 1973 Middle East War. Such weapons appreciably increase U.S. capability to apply force directly to a selected military target rather than to the surrounding area.

The improvement of the accuracy and lethality of U.S. air-to-ground conventional munitions is important. Antishipping and antiarmor weaponry such as the Harpoon discussed earlier, and the Maverick, an antiarmor weapon, are being developed and procured for use against specific high value targets.

The Navy has deployed the extended range data link Walleye weapon system providing intermediate range standoff capability against heavily defended targets. The air-to-ground GBU-15, an Air Force development, has long standoff capability with terminal electro-optical guidance to produce excellent accuracy. Development in imaging infrared guidance, antiradiation missiles and penetrating warheads will provide future capability against point and hardened targets.

The PRC tactical inventory of about 1,000 aircraft onsists of F-9/Fantan, MIG-15/Fagot fighter-bombers, /Beagle, and TU-2/Bat medium-range bombers. The RC aircraft industry is producing both the Fantan and eagle.

In July 1976, the PRC forces conducted a joint service xercise opposite Taiwan. During the week-long exercise, he attack aircraft were reported in bombing and strafing ctivity in support of parachute assaults with the entire force eing protected by interceptors. Although the exercise was lementary by U.S. standards, it did show increased ophistication in the use of tactical air power in the PRC.

The dramatic technological improvements by the Soviet Jnion in its tactical air forces present a formidable threat to J.S. and NATO forces. The ability of our ground forces to ght and survive successfully in a combat environment is ow threatened by the new and improved Soviet ground ttack fighter bombers. This threat can be met only if the Jnited States brings the current series of aircraft as rogrammed into our tactical air forces. Moreover, it must ensure that the technological edge in this area is not lost through complacency and failure to fund follow-on research and development activities. In the era of rough strategic nuclear equivalence, conflict between the U.S.S.R. and the United States is centered in the research and development of future weapon systems technologies. The Soviets are gaining technologically but they must not be permitted to surpass the United States. If they do so, the Nation may enter battle not only outnumbered but with technologically inferior equipment.

Theater Nuclear Forces

A theater nuclear capability is indispensable to successful deterrence and defense. Theater nuclear forces complement general purpose forces and provide a continuum between conventional and strategic nuclear forces.

A Tartar Missile is fired from a U.S. guided missile destroyer during a missile firing exercise.

In the event aggression cannot be contained conventionally, theater nuclear forces provide the capability to terminate, if necessary, a conflict at less than a strategic nuclear level of intensity, on terms acceptable to the United States and its allies. Tactical nuclear weapons are deployed as an integral part of U.S. theater forces to strengthen the deterrent effect of forward defense and to provide immediately available combat power to augment conventional forces. In the case of a Warsaw Pact attack which allows NATO little time for preparation or mobilization, NATO conventional forces would be greatly disadvantaged. A credible option for selective employment of theater nuclear weapons can contribute to deterrence and also provide augmentation should conventional means be found insufficient.

The conventional balance in Europe is such that if Warsaw Pact forces are able to mass secretly and apply armored pressure to a given point in the defense line, NATO's ability to defend with conventional forces would be greatly weakened. Selective employment of nuclear weapons against armored thrusts could greatly contribute to theater deterrence and provide an intermediate option between conventional warfare and a general nuclear war.

The Soviets currently possess a tactical nuclear capability which could serve as a significant reinforcement to their offensive operations in Europe. The developing PRC nuclear capability is of less immediate concern to the United States.

SIGNIFICANT US & USSR INITIATIVES GENERAL PURPOSE FORCES SYSTEMS

US	USSR
GROUND FORCES	
ARMY MAJOR SYSTEMS: AAH & UTTAS, XM-1 TANK & MICV, PATRIOT (SAM-D)	* T-72 MEDIUM TANK
* DRAGON & TOW ANTITANK WEAPONS	* NEW/IMPROVED ANTITANK GUIDED MISSILES
US ROLAND	* SP ARTILLERY (122mm/152mm)
GENERAL SUPPORT ROCKET SYSTEM (GSRS)	* TACTICAL SAMS (SA-8)
	* HIND A HELO
NAVAL FORCES	
** 688 CLASS ATTACK SUB	* KIEV CLASS CARRIER
** LHA AMPHIB ASSAULT SHIP	* KARA CLASS CRUISER
GUIDED MISSILE FRIGATE (HARPOON EQUIPPED)	* KRIVAK CLASS DESTROYER
** NIMITZ CLASS CARRIER	* NEW CLASS LPD/LSD
GUIDED MISSILE DESTROYER (AEGIS)	* NEW, VERY LARGE REPLENISHMENT SHIP
NUCLEAR GUIDED MISSILE STRIKE CRUISER	* ALFA CLASS SSN
TOMAHAWK MISSILE	* TANGO CLASS SS
TACTICAL AIR FORCES	
* A-10 CLOSE AIR SUPPORT A/C	* SU-19 (FENCER A) VGW FIGHTER BOMBER
* F-15 (EAGLE) FIGHTER	* MIG-23 (FLOGGER B) FIGHTER
EF-111A	* SU-17 (FITTER C) FIGHTER BOMBER
F-14 (TOMCAT) FIGHTER	* YAK-36 (FORGER A) V/STOL
F-16 FIGHTER	* MIG-23 (FLOGGER) FIGHTER BOMBER
F/A-18	* MIG-25 (FOXBAT B) RECONNAISSANCE/STRIKE
AWACS	

* Currently being deployed: still in production.
** Now in Series production.

CHART 5

The Soviets have a significant number of nuclear missiles with which they could launch an attack on the Eurasian continent. Their peripheral missile attack force consists of MRBMs (1,050 nm range) and IRBMs (2,200 nm range) located in the western U.S.S.R. In addition, some of their ICBMs are capable of being fired to short range and can be retargeted. This ability increases their capability to attack either Western Europe or China.

The Soviet Union has deployed a large number of nuclear-capable tactical missiles and rockets—primarily the Scud short-range (85–160 nm) tactical ballistic missile, the Frog, a surface-to-surface unguided rocket and the Scaleboard, a longer range surface-to-surface missile.

The Soviet SS-4 and SS-5 missile force has been slightly reduced this year with deactivation of some SS-4 launchers.

As stated last year, the Soviets began testing a new mobile solid propellant IRBM, the SS-X-20 in the fall of 1974. R&D flight testing of this missile, which is a two-state derivative of the three-stage SS-X-16 ICBM, is now essentially complete. The flight test program has proceeded at a rapid pace and has been highly successful. Flight testing has featured all of the milestones of a typical R&D program.

Initial deployment of the SS-X-20 is expected to occur in the near future.

The Soviets have also continued active training in nuclear delivery techniques with the tactical aircraft assigned to frontal aviation. The most frequently used aircraft on nuclear delivery training missions are MIG-21/Fishbed-Js, -Ks and -Ls; SU-7 and SU-17/Fitters; MIG-23/Floggers; various medium-range bombers. The SU-19/Fencer is expected to be an excellent aircraft for this type of mission.

The U.S. inventory does not contain any ballistic missiles in the MR/IRBM class. U.S. theater nuclear forces consist of nuclear-capable cannon artillery, tactical surface-to-surface missiles, nuclear-armed strike aircraft, nuclear air defense, atomic demolition munitions and ASW nuclear systems. Additionally, a substantial number of Poseidon SLBM warheads are committed to support the Supreme Allied Commander, Europe (SACEUR). The 8-inch and 155 mm nuclear artillery projectiles constitute the nuclear artillery stockpile. A new 8-inch nuclear projectile is now in engineering development. This new projectile will provide about 50 per cent improvement in effectiveness and an 80 per cent reduction in collateral damage over the current 8-inch projectile. Funds are also being requested to begin development of an improved 155 mm projectile. The 155 mm projectile is critical for support of NATO allies who are in the process of standardizing the 155 mm howitzer as their predominant artillery weapon and to ensure appropriate density of nuclear firepower across NATO's front.

Pershing and Lance are the principal tactical surface-to-surface missiles. Seageant and Honest John are being replaced by Lance although some Honest Johns will be retained for the foreseeable future in support of certain allies. Improved versions of gravity bombs are being deployed to theater forces, thus providing an enhanced air delivery capability. Additionally, standoff weapons technology is being investigated for possible application to tactical air delivered nuclear weapons.

There is no direct evidence to confirm the size of the PRC's nuclear weapon stockpile. The PRC has about 70 MR/IRBM deployed in a strategic role. Deployment patterns and minimum range capabilities of these systems indicate that China has the capability and intends to employ some of these missiles in a theater support role.

The level of production of nuclear weapons in the future will be constrained by the availability of delivery systems. Sufficient enriched materials are available to support currently deployed PRC weapon systems and those estimated in the future.

The primary aircraft available in the PRC inventory for nuclear attack is the TU-16/Badger. Additionally, TU-4/Bulls and a few IL-28/Beagles could be used to conduct nuclear strikes. If configured for nuclear attack, the Badgers could strike targets throughout China's periphery to a distance of 3,000 km. About 50 Soviet urban-industrial areas east of the Urals are within its range. The Beagle could also be used for nuclear attacks against the Soviet Union. However, the Beatle radius-of-action would limit any such strikes to the immediate border area.

Turning now to naval forces, the U.S. Department of Defense still does not believe the PRC has any naval nuclear weapons deployed.

As for the U.S.S.R., although there are many uncertainties as to the number of such weapons in its inventory, their existence is clearly established. The Soviets have a balanced force of surface-to-surface and surface-to-air nuclear tipped weapons for naval service.

The United States is developing the Harpoon antiship missile, and is conducting a Phase II study of a nuclear warhead for this system. Based on the results of this study, the earliest tentative deployment of the nuclear version of this weapon is the early 1980s. Terrier and Talos missiles now provide fleet air defense.

The current inventory of U.S. tactical nuclear weapons is becoming obsolete since these weapons represent essentially the technology of the 1950s and 1960s. It is essential that the United States modernize the theater nuclear force capability as these weapons play an important role in our deterrent strategy.

Qualitative advantages must be maintained by providing an improved tactical nuclear stockpile with greater accuracy and enhanced security devices. U.S. modernization efforts include major improvements in response time, flexibility in employment, lower collateral damage and enhanced security. It is important that technological advances and theater nuclear force modernization continue so that the United States maintains a viable option between conventional warfare and strategic nuclear warfare.

Chemical and Biological Warfare

Present United States policy toward chemical and biological warfare (BW) remains unchanged and is based on adherence to the convention on the Prohibition of Development, Production, and Stockpiling of Bacteriological (Biological) and Toxin Weapons and their destruction, hereafter referred to as the BW Convention and the 1925 Geneva Protocol, both of which the United States Senate has ratified.

In the Convention, the parties undertake not to develop, produce, stockpile, acquire, or retain biological agents or toxins of types or in quantities that have no justification for peaceful uses, as well as weapons, equipment, and means of delivery designed to use such agents or toxins for hostile purposes or in armed conflict. As a result, the United States destroyed all military stocks of biological warfare agents and munitions. The only continuing military programs related to biological agents are for defensive protective equipment and research related to the prevention of disease.

The Geneva Protocol of 1925, in effect, prohibits the "first use" of chemical and biological agents in war and is not a "non-use" treaty. The United States, as have most major powers, retained the right to retaliate should chemical weapons be used against it. Therefore, the Department of Defense continues programs designed to improve both the defensive and retaliatory aspects of our chemical warfare posture. This is done in the hope of deterring the use of chemical weapons until such time as an effective and verifiable elimination of such weapons can be negotiated. While the Department of Defense actively supports and participates in such negotiations, primarily in the Conference of the Committee on Disarmament, little progress on substantive issues has developed despite several years of active work.

The Joint Chiefs of Staff view the potential of modern chemical warfare as a most serious threat. The JCS strongly support the view that a treaty based on inadequate provisions for verification of compliance offers the signatory no assurance that he has accomplished anything other than unilateral disarmament.

Modern chemical agents and means of employment will offer significant tactical advantages to the user, even against a well-protected opponent. Retaliation or a capability to retaliate in kind precludes ceding any such advantage to an enemy. Should the United States be attacked on a significant scale with chemicals, while lacking the ability to retaliate with chemicals to redress the situation, it could force initiation of a nuclear response in order to prevent total defeat or a military disaster. As the Soviets achieve tactical nuclear parity, this option may become less viable.

The Soviet/Warsaw Pact forces continue to maintain a superior capability to operate in toxic environments. They are the best equipped and prepared forces in the world to employ chemical weapons and to operate under Chemical, Biological and Radiological (CBR) warfare conditions.

Neither the Soviet nor the other Warsaw Pact policy makers and planners are being deterred, either for technical or political reasons, from including chemical weapons in their arsenal despite the singular unpopularity of "mass destruction" weapons that exists throughout the world.

While the Soviet leaders are currently pursuing a total ban on the development, production, and stockpile of chemical weapons, their military efforts in the chemical warfare (CW) area continue unabated. CBR training areas are becoming more sophisticated, improved training methods are being developed, and equipment is being improved and fielded at an increasing rate.

There is no evidence to suggest slowdown in their efforts to improve troop operations in toxic environments. Warsaw Pact doctrine and plans envision the employment of these weapons in conjunction with either conventional or nuclear weapons. A variety of delivery systems and chemical agents for use against any tactical target in the battle area is available to front commanders.

The Soviets have the capability to use CW weapons in a war with NATO forces, even on a first strike surprise basis.

A large, well-equipped and well-trained CBR organization is organic to the Warsaw Pact force structure. In addition to the CBR troops, all other combat and combat support forces receive CBR training. They are unsurpassed in their capability to protect themselves and to conduct offensive and defensive tactical operations when such weapons are used. Personnel protection equipment is available to all fighting forces and support personnel.

Chemical specialists and units exist in all formations down to regiment. Their importance has been emphasized through unit reorganization and enlargement. They are responsible for technical advice, decontamination, reconnaissance and the operation of all specialized equipment and vehicles. Combat and combat support units are well trained in protective and decontamination techniques. In addition, all medical support units train to care for the mass casualties expected from nuclear, chemical and biological warfare.

Increasing numbers of combat and combat support vehicles with integrated CBR collective protection systems are appearing throughout the Warsaw Pact area.

Interwoven throughout all of the formidable efforts being put forth by the Soviets and other Warsaw Pact forces is the tenet that a viable CBR protection posture is prerequisite to employment of mass destruction weapons whether nuclear, chemical or biological.

U.S. Chemical Warfare Capability

U.S. policy is to retain a chemical warfare capability designed to deter the use of these weapons against us or our allies, and should deterrence fail, to permit us a reasonable degree of retaliation with chemical weapons.

In the past two years, progress has been made in improving chemical warfare posture of the United States, but much remains to be done.

USSR GENERAL PURPOSE FORCE TRENDS (1966-1976)

(END OF FISCAL YEAR)

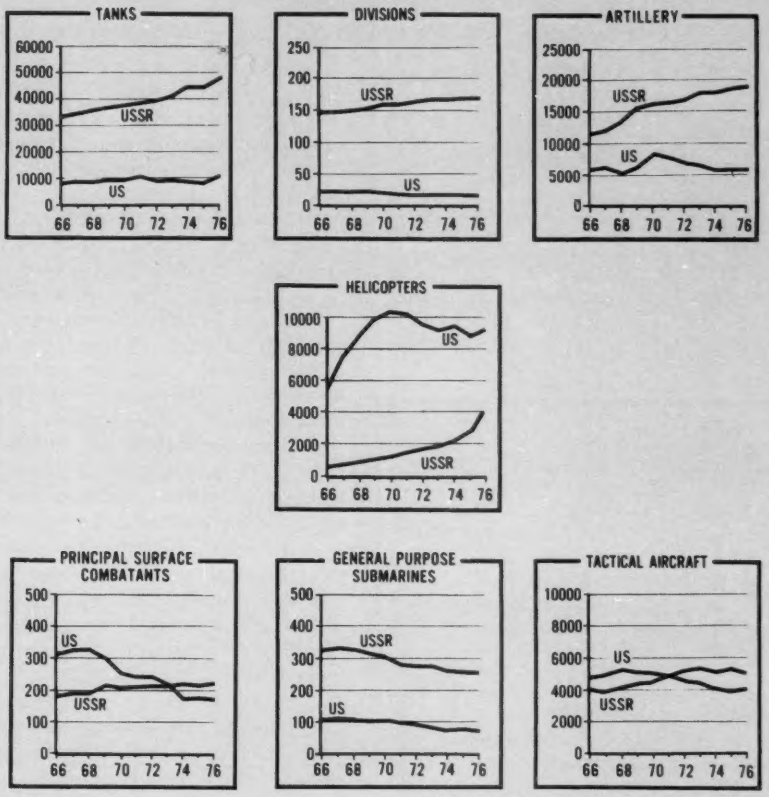


CHART 6

The first priority objective for improvement remains on protective capabilities since adequate protection is essential to ensure the survivability of the conventional and theater tactical nuclear capability. Current protective capability must be rated as marginal due primarily to shortages of protective clothing and the lack of an adequate area warning system.

Procurement of CW defensive equipment for war reserve and peacetime training have increased in FY 1977 and will continue.

The Army and Air Force are adding chemical specialist personnel in training and operational units. Review and revision of Service doctrine for operations in a toxic environment to adjust to changing operational concepts are continuing.

DoD will continue to carry its emphasis on warning, decontamination, medical defense and training programs to the NATO allies. NATO's force goals already give the highest priority to CW defenses. The principal program areas for development and procurement of protective equipment include: improved prophylaxis and therapy to protect against chemical agents; point-source detection and warning alarms; area scanning alarms; decontamination methods and equipment; protective clothing, masks, gloves, and boots required for individual physical protection; collective protection vehicles and buildings; liquid agent detector kits; and training agents and devices. These programs are designed to provide equipment for all of the U.S. forces—ground, naval, and air—with maximum standardization. Comparable allied programs are integrated into these efforts.

The second objective in the improvement program is to enhance the credibility of U.S. retaliatory stockpile through reduced vulnerability, increased availability of a greater variety of munitions to the theater commander, and enhanced peacetime security.

The basic requirement in the maintenance of a retaliatory chemical capability is to enhance the deterrence of use against U.S. or allied forces. Given the present inadequate protective posture, or even the improved posture proposed for the future, the improvement of our retaliatory capability may decrease the likelihood of use by a potential aggressor. The Joint Chiefs of Staff believe an adequate retaliatory capability and an improved protective posture, combined with increased training and revised doctrine present the most credible deterrent posture at the minimum cost.

The United States' present CW stockpile is aging and contains a number of obsolescent weapons systems. Modernization of the chemical weapons stockpile is, therefore, needed if the United States is to maintain a limited, but credible, capability in this area.

The aims of modernization are to provide a sufficie[illegible] stockpile, allow for rapid deployment of munitions fro[illegible] storage to theater locations, and provide greater employment flexibility through variations in delivery configurations.

Modernization of the chemical warfare deterrent and retaliatory stockpile can be accomplished by either upgrading the present stockpile, or by converting the stockpile to binary munitions. Binary munitions offer a feasible, economic, and safe alternative which would limit potential hazards to areas surrounding storage sites, and would provide greater deployment flexibility by eliminating degradation of agent purity. In addition, there would be an elimination of costly disposal programs and reduced cost in Government production plant facilities.

The Joint Chiefs of Staff strongly support the improvement of U.S. chemical munitions stockpile as an essential element in the necessary overall improvement of our ability to deter and, if necessary, fight in a toxic environment.

Actions are underway to redress the current disparity between the United States/NATO and the Soviet Union/Warsaw Pact in chemical warfare capability. However, only continued support of the Service programs will allow progress toward a force prepared to fight in a toxic environment, if forced to do so by a potential enemy.

The continued move toward achievement of previous Soviet military initiatives indicates the U.S.S.R. is continuing the high rate of improvement of its genera[illegible] purpose forces in terms of quality and sophistication of equipment, while maintaining its advantage in numbers.

The Soviet general purpose force modernization and development program is second only to its massive strategic force program.

WHO'S NEWS IN DEFENSE

Appointments

The New Special Assistant to the Secretary of Defense and Assistant Secretary of Defense is John G. Kester, 38, Fulbright Scholar and Harvard Law School graduate. Kester served from 1969 to 1972 as Deputy Secretary of the Army (Manpower and Reserve Affairs).

Principal Deputy Assistant Secretary of Defense (International Security Affairs) and Director of the Department of Defense Strategic Arms Limitation Talks Task Force is Walter B. Slocombe. He served with the National Security Council in 1969 to 1970 and has been a research associate at the International Institute for Strategic Studies in London, England.

Assignments

Lt. Gen. John R. Guthrie, USA, Commanding General IX Corps/U.S. Army Japan to Commanding General, United States Army Materiel Development and Readiness Command and appointment to grade of general.

Brig. Gen. John T. Guice, Air National Guard, currently serving as Deputy Commander, Air National Guard, to Director, Air National Guard, National Guard Bureau and appointment of grade of major general.

General Guthrie

For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402
Subscription Price: $17.00 domestic per year; $4.00 additional for foreign mailing; 65 cents per single copy.
☆ U.S. GOVERNMENT PRINTING OFFICE 240-827/V-11